EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	11310222	@ad<"20010126"	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2006/07/13 10:02
L2	1683238	network communication$2	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2006/07/13 10:02
L3	174883	traffic	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2006/07/13 10:02
L4	66644	2 with 3	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2006/07/13 10:03
L5	28788	4 and 1	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2006/07/13 10:03
L6	18098	traffic with flow$2	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2006/07/13 10:03
L7	4346	5 and 6	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2006/07/13 10:03
L8	2333192	weight$ priorit$5	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2006/07/13 10:03
L9	1229	8 with 6	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2006/07/13 10:04
L10	348	7 and 9	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2006/07/13 10:04
L11	16118	lucent.as.	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2006/07/13 10:04

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L12	334	10 not 11	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2006/07/13 10:31
L13	1229	370/254.ccls.	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2006/07/13 10:31
L14	532	13 and 1	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2006/07/13 10:31
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L16	235	15 not 11	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2006/07/13 10:35
L17	11916	709/223.ccls. 709/224.ccls. 709/226.ccls. 709/228.ccls.	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2006/07/13 10:35
L18	5192	17 and 1	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2006/07/13 10:35
L19	5094	18 not 11	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2006/07/13 10:35
L20	31	4 and 9 and 19	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2006/07/13 10:35

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Terms used **traffic measur$ network**

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1 Data networks as cascades: investigating the multifractal nature of Internet WAN traffic

A. Feldmann, A. C. Gilbert, W. Willinger

October 1998 **ACM SIGCOMM Computer Communication Review , Proceedings of the ACM SIGCOMM '98 conference on Applications, technologies, architectures, and protocols for computer communication SIGCOMM '98**, Volume 28 Issue 4

Publisher: ACM Press

Full text available: pdf(2.19 MB) Additional Information: full citation, abstract, references, citings, index terms

In apparent contrast to the well-documented self-similar (i.e., monofractal) scaling behavior of measured LAN traffic, recent studies have suggested that measured TCP/IP and ATM WAN traffic exhibits more complex scaling behavior, consistent with multifractals. To bring multifractals into the realm of networking, this paper provides a simple construction based on cascades (also known as multiplicative processes) that is motivated by the protocol hierarchy of IP data networks. The cascade framewor ...

2 The changing nature of network traffic: scaling phenomena

A. Feldmann, A. C. Gilbert, W. Willinger, T. G. Kurtz

April 1998 **ACM SIGCOMM Computer Communication Review**, Volume 28 Issue 2

Publisher: ACM Press

Full text available: pdf(1.80 MB) Additional Information: full citation, abstract, citings, index terms

In this paper, we report on some preliminary results from an in-depth, wavelet-based analysis of a set of high-quality, packet-level traffic measurements, collected over the last 6-7 years from a number of different wide-area networks (WANs). We first validate and confirm an earlier finding, originally due to Paxson and Floyd [14], that actual WAN traffic is consistent with statistical self-similarity for sufficiently large time scales. We then relate this large-time scaling phenomenon to the em ...

3 Session 3A: Networks: Measurements and characterization of traffic in a university environment

Balaji R. Venkatraman, R. E. Newman-Wolfe, Randy Chow, Haniph A. Latchman

April 1992 **Proceedings of the 30th annual Southeast regional conference**

Publisher: ACM Press

Full text available: pdf(531.86 KB) Additional Information: full citation, abstract, references

In this paper we characterize the traffic seen in a university environment, especially on the broadband medium which serves as the backbone. The traffic is characterized based on parameters such as the volume of traffic generated, the packet inter-arrival times, the

packet size and the protocol type and application that generated the traffic. We use the packet train model to analyze and characterize the traffic. Network traffic being inherently bursty, we propose a practical definition for burst ...

4 Real-time estimation and dynamic renegotiation of UPC parameters for arbitrary traffic sources in ATM networks

Brian L. Mark, Gopalakrishnan Ramamurthy
December 1998 **IEEE/ACM Transactions on Networking (TON)**, Volume 6 Issue 6
Publisher: IEEE Press
Full text available: pdf(424.49 KB) Additional Information: full citation, references, citings, index terms

Keywords: asynchronous transfer mode, quality of service, real-time estimation, resource allocation, traffic characterization

5 Military applications: Simulation methods for analysis of traffic processes in ATM networks

Kenneth Y. Jo, Christopher Munk
December 2000 **Proceedings of the 32nd conference on Winter simulation**
Publisher: Society for Computer Simulation International
Full text available: pdf(605.81 KB) Additional Information: full citation, abstract, references

This paper presents efficient simulation methods for analyzing modern, large-scale networks and evaluating their performance attributes. Characterizing traffic flows from multiple sources and applications is key in assessing overall network performance measures. It is essential to have quantitative network cost and performance measures in order to plan, design, and implement modern, large-scale networks such as the Advanced Distributed Learning Network (ADLN). ADLN requires integrated, multimedi ...

6 Papers: Synthesis of fractional gaussian noise using linear approximation for generating self-similar network traffic

Sergio Ledesma, Derong Liu
April 2000 **ACM SIGCOMM Computer Communication Review**, Volume 30 Issue 2
Publisher: ACM Press
Full text available: pdf(961.20 KB) Additional Information: full citation, abstract, references, citings

The present paper focuses on self-similar network traffic generation. Network traffic modeling studies the generation of synthetic sequences. The generated sequences must have similar features to the measured traffic. Exact methods for generating self-similar sequences are not appropriate for long traces. Our main objective in the present paper is to improve the efficiency of Paxson's method for synthesizing self-similar network traffic. Paxson's method uses a fast, approximate synthesis for the ...

7 Some optimal traffic regulation schemes for ATM networks: a Markov decision approach

Mohamed Abdelaziz, Ioannis Stavrakakis
October 1994 **IEEE/ACM Transactions on Networking (TON)**, Volume 2 Issue 5
Publisher: IEEE Press
Full text available: pdf(1.20 MB) Additional Information: full citation, references, index terms

8 Dynamics of IP traffic: a study of the role of variability and the impact of control

Anja Feldmann, Anna C. Gilbert, Polly Huang, Walter Willinger
August 1999 **ACM SIGCOMM Computer Communication Review , Proceedings of the conference on Applications, technologies, architectures, and protocols for computer communication SIGCOMM '99**, Volume 29 Issue 4

Publisher: ACM Press

Full text available: pdf(1.77 MB) Additional Information: full citation, abstract, references, citings, index terms

Using the *ns-2*-simulator to experiment with different aspects of user- or session-behaviors and network configurations and focusing on the qualitative aspects of a wavelet-based scaling analysis, we present a systematic investigation into how and why variability and feedback-control contribute to the intriguing scaling properties observed in actual Internet traces (as our benchmark data, we use measured Internet traffic from an ISP). We illustrate how variability of both user aspects and ...

9 Design of a fuzzy traffic controller for ATM networks

Ray-Guang Cheng, Chung-Ju Chang

June 1996 **IEEE/ACM Transactions on Networking (TON)**, Volume 4 Issue 3

Publisher: IEEE Press

Full text available: pdf(1.67 MB) Additional Information: full citation, references, citings, index terms

10 Analysis of ISP IP/ATM network traffic measurements

Raja Epsilon, Jun Ke, Carey Williamson

September 1999 **ACM SIGMETRICS Performance Evaluation Review**, Volume 27 Issue 2

Publisher: ACM Press

Full text available: pdf(794.71 KB) Additional Information: full citation, abstract, citings, index terms

This paper presents network traffic measurements collected from a commercial Internet Service Provider (ISP) whose traffic is being carried over an ATM backbone network. Much of the aggregate traffic is Web-related, and thus represents a Web/TCP/IP/AAL-5/ATM protocol stack. Four traces have been collected at the AAL-5 frame level, using a NavTel IW95000 ATM test set. These traces provide a detailed look at protocol-level behaviours, but only for rather short time durations (e.g., 30-40 seconds p ...

Keywords: ATM networks, TCP/IP, network traffic measurement, web, wworkload characterization

11 Delay jitter first-order and second-order statistical functions of general traffic on high-speed multimedia networks

Cathy A. Fulton, San-qi Li

April 1998 **IEEE/ACM Transactions on Networking (TON)**, Volume 6 Issue 2

Publisher: IEEE Press

Full text available: pdf(469.42 KB) Additional Information: full citation, references, citings, index terms

Keywords: QBD analysis, autocorrelation function, cell delay variation, jitter, multimedia, probability density function

12 Experimental queueing analysis with long-range dependent packet traffic

Ashok Erramilli, Onuttom Narayan, Walter Willinger

April 1996 **IEEE/ACM Transactions on Networking (TON)**, Volume 4 Issue 2

Publisher: IEEE Press

Full text available: pdf(1.71 MB) Additional Information: full citation, references, citings, index terms, review

13 Self-similarity through high-variability: statistical analysis of Ethernet LAN traffic at the source level

Walter Willinger, Murad S. Taqqu, Robert Sherman, Daniel V. Wilson
February 1997 **IEEE/ACM Transactions on Networking (TON)**, Volume 5 Issue 1
Publisher: IEEE Press
Full text available: pdf(772.28 KB) Additional Information: full citation, references, citings, index terms

Keywords: LAN traffic measurements, fractional Gaussian noise, infinite variance, long-range dependence, packet-train model, self-similarity

14 Self-similarity through high-variability: statistical analysis of ethernet LAN traffic at the source level
Walter Willinger, Murad S. Taqqu, Robert Sherman, Daniel V. Wilson
October 1995 **ACM SIGCOMM Computer Communication Review , Proceedings of the conference on Applications, technologies, architectures, and protocols for computer communication SIGCOMM '95**, Volume 25 Issue 4
Publisher: ACM Press
Full text available: pdf(1.79 MB) Additional Information: full citation, abstract, references, citings, index terms

A number of recent empirical studies of traffic measurements from a variety of working

17 Network measurement of the VMTP request-response protocol in the V distributed system

david R. Cheriton, Carey L. Williamson

May 1987 **ACM SIGMETRICS Performance Evaluation Review , Proceedings of the 1987 ACM SIGMETRICS conference on Measurement and modeling of computer systems SIGMETRICS '87**, Volume 15 Issue 1

Publisher: ACM Press

Full text available: pdf(1.32 MB) Additional Information: full citation, abstract, references, citings, index terms

Communication systems are undergoing a change in use from stream to request-response or transaction communication. In addition, communication systems are becoming increasingly based on high-speed, low delay, low error rate channels. These changes call for a new generation of networks, network interfaces, and transport protocol design. The performance characteristics of request-response protocols on these high-performance networks should guide the design of this new generati ...

18 Fast, approximate synthesis of fractional Gaussian noise for generating self-similar network traffic

Vern Paxson

October 1997 **ACM SIGCOMM Computer Communication Review**, Volume 27 Issue 5

Publisher: ACM Press

Full text available: pdf(1.40 MB) Additional Information: full citation, abstract, citings, index terms

Recent network traffic studies argue that network arrival processes are much more faithfully modeled using statistically *self-similar* processes instead of traditional Poisson processes [LTWW94, PF95]. One difficulty in dealing with self-similar models is how to efficiently synthesize traces (sample paths) corresponding to self-similar traffic. We present a fast Fourier transform method for synthesizing approximate self-similar sample paths for one type of self-similar process, Fractional ...

19 Virtual clock: a new traffic control algorithm for packet switching networks

L. Zhang

August 1990 **ACM SIGCOMM Computer Communication Review , Proceedings of the ACM symposium on Communications architectures & protocols SIGCOMM '90**, Volume 20 Issue 4

Publisher: ACM Press

Full text available: pdf(1.19 MB) Additional Information: full citation, abstract, references, citings, index terms

A challenging research issue in high speed networking is how to control the transmission rate of statistical data flows. This paper describes a new algorithm, VirtualClock, for data traffic control in high-speed networks. VirtualClock maintains the statistical multiplexing flexibility of pocket switching while ensuring each data flow its reserved average throughput rate at the same time. The algorithm has been tested through simulation.

20 Distributed testing and measurement across the Atlantic packet satellite network (SATNET)

K. Seo, J. Crowcroft, P. Spilling, J. Laws, J. Leddy

August 1988 **ACM SIGCOMM Computer Communication Review , Symposium proceedings on Communications architectures and protocols SIGCOMM '88**, Volume 18 Issue 4

Publisher: ACM Press

Full text available: pdf(1.42 MB) Additional Information: full citation, abstract, references, index terms

The analysis of the test and measurement of TCP/IP performance over the Atlantic Packet Satellite Network (SATNET) is described. Both the methodology and tools as well as the results and their analysis are discussed. Because of the Internetwork nature of the environment, the tests were designed to allow the SATNET Measurement Taskforce to look at the effects of each component of the end-to-end path, e.g., local networks, gateways, SATNET, and protocol layers. Results are given for the IP se ...

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L2	1683238	network communication$2	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2006/07/13 10:02
L3	174883	traffic	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2006/07/13 10:02
L4	66644	2 with 3	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2006/07/13 10:03
L5	28788	4 and 1	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2006/07/13 10:03
L6	18098	traffic with flow$2	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2006/07/13 10:03
L7	4346	5 and 6	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2006/07/13 10:03
L8	2333192	weight$ priorit$5	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2006/07/13 10:03
L9	1229	8 with 6	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2006/07/13 10:04
L10	348	7 and 9	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2006/07/13 10:04
L11	16118	lucent.as.	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2006/07/13 10:04

EAST Search History

L12	334	10 not 11	US-PGPUB; USPAT; EPO; JPO; IBM_TDB	OR	ON	2006/07/13 10:04

EAST Search History

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L1	1	"weighted traffic flow".clm.	US-PGPUB	OR	ON	2006/07/13 09:53
L2	2219	"network element".clm.	US-PGPUB	OR	ON	2006/07/13 09:53
L3	9463	"traffic".clm.	US-PGPUB	OR	ON	2006/07/13 09:53
L4	340	2 and 3	US-PGPUB	OR	ON	2006/07/13 09:53
L5	295	"communication traffic".clm.	US-PGPUB	OR	ON	2006/07/13 09:54
L6	14	4 and 5	US-PGPUB	OR	ON	2006/07/13 09:54
L7	621	4 or 5	US-PGPUB	OR	ON	2006/07/13 09:54
L8	7948	"weighted".clm.	US-PGPUB	OR	ON	2006/07/13 09:54
L9	101495	"flow".clm.	US-PGPUB	OR	ON	2006/07/13 09:54
L10	9	8 and 9 and 7	US-PGPUB	OR	ON	2006/07/13 09:54